

 **Senceive****FlexiMeasure™**

FlexiMeasure is a lightweight inclinometer designed for structural and geotechnical monitoring applications. Multiple segments can be connected in series to form a chain of flexibly coupled sensors. Because FlexiMeasure uses triaxial sensors it can be installed in any orientation.

Suitable for many geotechnical and structural monitoring applications including:

- Tunnel distortion and convergence
- Tunnel heave/settlement
- Down borehole monitoring
- Structural movement
- Consolidation and compaction
- Shape/stability
- Rail trackbed twist and cant

Key features

- Light weight carbon fibre construction
- Ultra-low power consumption – can operate indefinitely with a small solar panel
- Click and connect segments – length of overall chain can be determined on site and adjusted to suit requirements
- Joints are flexible so a string of segments can be fitted to bridge or tunnel arches
- Auto addressing and location of segments
- Integrated triaxial tilt sensor
- Extremely low noise performance
- Low profile and discreet
- Resolution of 0.0001°(0.0018 mm/m) and repeatability of $\pm 0.0005^\circ$ (± 0.009 mm/m)
- Integrated temperature sensor
- Versatile mounting options
- Ingress Protection tested to IP68
- Radiated Emissions and RF Immunity tested to EN 61326-1:2013
- Available in different lengths to suit specific requirement
- Segments can be re-used in other applications and configurations

FlexiMeasure™



Physical Specifications

Parameter	Value
Length	0.5 m, 1 m, 2 m, 3 m
Total Mass	250 g for 1 m segment
Housing Material	Carbon fibre and stainless steel 316
Protection (BS EN 60529: 1992 + A2: 2013)	IP68 at 200 m water depth pressure for 24 hours
Mounting Options	Down borehole and structural
Operating Temperature Range	-40°C to +85°C

Tilt Sensor Specifications

Parameter	Value
Resolution	0.0001° (0.00175 mm/m)
Repeatability	±0.0005° (±0.0087 mm/m)
Range	±90°

Power and Communication

Parameter	Value
Power	3.6V DC from EdgeHub via CAN
Communications Bus Type	Low power Control Area Network (CAN)
Readout Device	FMH-LTE-S Edge Hub with LTE (without FlatMesh™)
Typical Battery Life	Indefinitely on 30 W solar panel via EdgeHub (CAN)
Maximum Chain Length	32 segments

Certifications

Ingress Protection tested to IP68 (IPX8 at 20 bar)

EdgeHub with CAN connection to FlexiMeasure FCC EMC Testing complies to:

- Part 15.107 and 15.109 of CFR 47:2018 FCC rules
- Part 15.207 and 15.209 of CFR 47:2018 FCC rules

FlexiMeasure™



Certifications (continued)

EdgeHub with CAN connection to FlexiMeasure RSE (30.0 MHz to 12.75 GHz) to EN 300 328 V2.1.1

- Radiated spurious emissions comply with the Radio Equipment Directive (RED) 2014/53/EU.

EdgeHub with CAN connection to FlexiMeasure EMC testing complies with the RED 2014/53/EU.

- Radiated Emissions and RF Immunity tested to EN 61326-1:2013
- Radiated emissions (EN 55032 and CISPR 11) & ESD immunity (EN 61000-4-2)
- Radiated RF immunity (EN 61000-4-3)
- Fast transient bursts (EN 61000-4-4) & Surge (EN 61000-4-5)
- Conducted RF immunity (EN 61000-4-6) & Magnetic Field immunity (EN 61000-4-8)

Testing to conformity with essential requirements of RoHS Directive 2011/65/EU

FCC ID is not required as FlexiMeasure is a sensor powered by EdgeHub 3.6V DC via CAN connection.

Ordering Information and Accessories

Model	Description
FS-FXM-0500	Segment 0.5 m
FS-FXM-1000	Segment 1 m
FS-FXM-2000	Segment 2 m
FS-FXM-3000	Segment 3 m
FS-EC-BB59-FX10	FlexiMeasure IPI Borehole Cable Assembly (59 mm ID, 10 m cable)
FS-EC-BB59-FX2	FlexiMeasure IPI Borehole Cable Assembly (59 mm ID, 2 m cable)
FS-EC-BB49-FX10	FlexiMeasure IPI Borehole Cable Assembly (49 mm ID, 10 m cable)
FS-EC-BB49-FX2	FlexiMeasure IPI Borehole Cable Assembly (49 mm ID, 2 m cable)
FF-FXW-59	FlexiMeasure IPI Wheel Guide Kit (59ID)
FF-FXW-49	FlexiMeasure IPI Wheel Guide Kit (49ID)
FT-FXM	FlexiMeasure Installation Kit
FS-FXMT	Terminator
FF-FXM-SF	Structural Mounting Bracket
FS-EC-FX2	FlexiMeasure to EdgeHub connection cable (2 m)
FS-EC-FX10	FlexiMeasure to EdgeHub connection cable (10 m)
FM3H-LTE-S	EdgeHub with LTE (without FlatMesh)

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